North Dakota GIS Initiative Report
To Governor John Hoeven

July 1, 2002 – June 30, 2003

Executive Order 2001-06: "The committee shall issue a report to the Governor's office at the end of each fiscal year, detailing progress, and problems encountered with GIS development in the state."

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Executive Summary

The Geographic Information System (GIS) initiative in North Dakota during the period July 1, 2002 – June 30, 2003 was marked by several achievements:

- The GIS Hub went on-line.
- State agencies are actively using the GIS Hub.
- GIS Hub applications have been and are currently being developed
- The GIS Technical Committee received the Special Achievement in GIS award.
- The GIS initiative received continued funding for the 2003-2005 biennium.

In July 2002 the Hub database went into production and by October 2002 the web services component of the Hub went live. Since that time the GIS Technical Committee (GISTC) has continued to focus on building upon the GIS Hub by adding data and applications. The GISTC is working to increase awareness of the Hub by promoting its use, value and functionality.

The Hub, which is hosted within the State Information Technology Department's infrastructure, is the foundation of future GIS work in the state. Although the Hub serves state agencies as a first priority, other levels of government and citizens will also benefit from the GIS Hub. Agencies can utilize the GIS Hub infrastructure for applications to be used internally or provided to their constituents, saving them from having to build their own duplicated systems. With the Hub, data is now available through several standardized interfaces and in a seamless and common format. State-wide projects such as Homeland Security, E-911 and health alert systems can make use of the GIS Hub.

The GISTC continues to be involved in GIS throughout the state, by working with individuals and groups of people. Two examples are the State Mapping Advisory Committee (SMAC) and the Full GISTC which is specified in Executive Order 2001-06. The SMAC, which sets mapping priorities throughout the state, met in August 2002. People from counties, cities, higher education and private enterprise from around the state met in a Full GISTC meeting in June. The GIS Coordinator will continue to meet with GIS professionals throughout the state in an effort to be aware of various GIS activities and to look for areas of mutual benefit.

Applications hosted by the GIS Hub have been and continue to be developed. The Devils Lake flood risk assessment application was completed in early 2003; the Division of Emergency Management plans to unveil this tool in early July. The Commerce Department released its North Dakota business site selection tool in March. The Tax Department is planning on a July release of their GIS-based Sales Tax Rate tool that can be utilized by vendors and the public to determine the total sales tax at any location within North Dakota.

In last year's report it was written, "The trademark of this fiscal year has been the cooperative involvement of many agencies to develop the Hub. Consensus building

between the state agencies represented by the GISTC has resulted in the beginning of a GIS strategy and centralized store of valuable spatial data for the State of North Dakota." In recognition of this the GISTC was awarded the ESRI Special Achievements in GIS award.

Monthly Highlights

July 2002

- Attended ESRI International Users Conference where the North Dakota GISTC received the prestigious Special Achievements in GIS award. Bob Nutsch co-presented a paper on the North Dakota Hub with Graham Morgan from SchlumbergerSema.
- The Hub database is now in production, and we now have a test and production environment. The Hub database is the centerpiece of the Hub, it is what the agencies require.
- Received approved SMAC (State Mapping Advisory Committee) list from the Governor (as per the Executive Order).

August 2002

- Set up the remaining Hub "feature services." These stream the Hub database data over the web, allowing people outside of the state firewall to access the database as if they are directly connecting. This is a very powerful tool and should generate great interest in what the Hub can do for people.
- Fourth GIS training class completed. We have saved the state $22,700 in direct training costs by having on-site training rather than sending individuals to out-of-state training. Classes were hosted by ITD at the Northbrook training lab or by DOT in their training lab.
- Metadata Explorer installation completed. This tool will allow people inside and outside of state agencies to search for state data.
- Hub Explorer (used for browsing the data on the Hub) has been completed.
- GIS Web site is completed, with only a few minor edits remaining.
- Met with the Legislative Council, showed them the Hub Explorer. They appeared to really like it. They will likely be able to replace their manually created PDF files of the legislative districts with the legislative district maps on the Hub.

September 2002

- Established layer names to be used for Devils Lake. This is important as there are standards to be subscribed to.
- Invited by Division of Emergency Management to attend an initial meeting on development of procedures for county risk assessment maps. It is likely that the Hub Explorer will be used to display this information as long as security requirements are met.
- SMAC meeting held September 9.

- Department of Commerce application is now running on the Hub. This is a first example of the Hub hosting an outside application for a State agency where the application was developed by a 3rd party. Work remains to be done on this application before it can go live.
- Fifth coordinated GIS training session completed at DOT. Total GIS training cost savings is now $27,650. If out-of-state travel costs would be included, $83,550 is saved.

October 2002

- The web component of the Hub is now in production.
- Met with the Tax Department. They are interested in the Hub hosting sales tax information and presenting that on the Web.
- Met with a member of the NDSU Extension Service to discuss the Hub hosting land use maps at no cost.
- Completed initial review of the Devils Lake application with the Division of Emergency Management.
- Department of Commerce application is now on the production servers. The Department of Commerce and their contractor KLJ will make some more modifications before publicizing this.

November 2002

- Executive Leadership GISTC meeting held November 13. This was an opportunity for regularly attending GISTC members to discuss the GIS initiative accomplishments and demonstrate the Hub to the executive leadership of the agencies serving on the GISTC.
- GIS Day successfully completed. We had a turnout that exceeded expectations with over 100 people attending events at the State Capitol and the Heritage Center.

December 2002

- Completed a Hub Explorer web site for the state Game and Fish Department. This site will remain in development while data sets are finalized.
- Completed initial address matching/geocoding research, beginning with some price estimates and set up issues. Further work will be done with evaluation data sets.
- Sixth coordinated GIS training session completed at DOT training lab with 12 students from multiple agencies attending. Total GIS training cost savings for the year is $33,800. If travel costs would be included, $101,100 is saved.
- New databases to store Government Land Office data (original survey plats) and the test database have been set up on the new server.

January 2003

- Met with the DOT to discuss possible development of mapping tools to replace their current manual method of creating road construction and road condition maps.
- Completed 3rd review of Devils Lake application with FEMA and DEM.

- Load testing of Devils Lake application completed, no problems founds.
- Submitted estimate to Tax Department for creation of a Hub Explorer website which would allow a user or vendor to click on an area and get a report of the total sales tax for that area.
- Met with the Public Services Commission. People from the Health Dept. and the SWC were at the same meeting in which we discussed a system for allowing the coal mines to share their data with regulatory state agencies. The Hub would be involved for storing data and providing the web tools.
- New Hub Explorer web site showing information along the Missouri River corridor was put into production.
- Devils Lake application website completed.

February 2003

- A picture of our GIS Day is on the gisday.com website at http://www.gisday.com/success-2002.html
- It is interesting to note that at the end of January, we had 14 agencies and commissions with login IDs to the Hub. From those 14 groups there are 135 user IDs for accessing the Hub database. On February 6, we had a new high of 35 users (connections) simultaneously connected to the Hub database. This number does not include those coming in to the Hub from the Web.
- The Legislative map on the Hub Explorer has been upgraded. Clicking on a district will bring up links to the Senator and Representatives for that district.

March 2003

- The Commerce Department sent out a press release on their CIMA (Commerce Internet Mapping Application) that was developed by Kadrmas, Lee, and Jackson (KLJ) and is hosted by the Hub.
- Participated in a State Radio meeting where they brought in a vendor to demonstrate a new 911 system.
- Met with the Tax Department and KLJ. The Tax Department requested that KLJ come in to discuss how they could create an application to be hosted on the Hub to allow a person to locate an address on a map or by typing in an address and from that location display the total sales tax.

April 2003

- While researching address matching/geocoding data and tools we discovered that with our ArcSDE license we can install and use StreetMap USA from ESRI. We have been told by ESRI that any number of agencies can use the StreetMap geocoding services for their internal purposes. This gives a person the ability to locate points on a map at no cost to the agency.
- Meeting with the Tax Department April 29 to discuss the GIS Sales Tax application. The eTeam group of ITD does not have the resources to build this application before the end of the current biennium. Bullberry Systems (sub-group of KLJ who built the Commerce Application) will build

the application which the Hub will host. Geocoding will be a large part of this application
- An article on the ND Hub is in the ESRI ArcUser magazine. An online version of it can be found at http://www.esri.com/news/arcuser/0403/ndhub1of2.html . Once again, we can be thankful for the efforts of the agencies and the people of ITD to make this happen.

May 2003
- Met with the Continuity in Government (COG) state group. GIS can play a very important role in COG.
- Completed evaluation of geocoding data. A whitepaper was completed and submitted for review to the GIS Technical Committee.
- The Commerce Department has been awarded the Special Achievements in GIS award by ESRI in recognition of their Commerce Internet Mapping Application (CIMA) which has been developed by KLJ and is hosted on the Hub.

June 2003
- Full GISTC meeting with 63 people attending (an increase over last year's meeting).
- Coverage to geodatabase workshop was a success with 16 people in attendance (from agencies, consultants, and cities). The following day was an informal seminar with members from the GISTC asking detailed questions. The intent of this workshop was to demonstrate at a nominal cost how to transition to a newer version of the GIS software in use by agencies.
- The North Dakota Hub made the main web page of ESRI
- The GIS Sales Tax Rate application for the Tax Department has been completed and deployed onto production on the Hub. The Tax Department plans to make this site public in late July or early August after they complete final testing. This site is designed to assist vendors in collecting the appropriate amount of sales tax based on the location of the purchaser.
- Met with member of the Health Department Division of Disease Control to discuss the role of the GIS Hub in their development of a Disease Surveillance System.

Future Goals

- Greater involvement with federal GIS initiatives.
- Greater involvement with other levels of government, e.g., counties and cities.
- Training in the effective use of the Hub in the form of informal seminars around the state.
- Develop and enhance the Hub with additional data, functionality, and applications.

- Investigate the possibility of getting GIS software into grade schools, similar to what South Dakota, Utah, and Montana have done.
- Market the Hub, making people aware of its flexibility and functionality.
- Continue to make the Hub and GIS an integral part of daily State government business and service to the citizens of the state.

Challenges

- Data acquisition – the GISTC and the State Mapping Advisory Committee (SMAC) will continue working to identify data needs and priorities.
- Streamlining GIS activities in the state – a state-wide GIS strategy should be developed that encompasses state agencies, counties, cities, tribal, and higher education to maximize the benefits offered by the Hub. Bridges of communication must be established between the various centers of GIS activity within the state.
- Spatially accurate centerlines with consistent and accurate attributes for county and city roads throughout the state do not exist. This information is needed for day-to-day needs of agencies using GIS and is necessary if planned systems such as E-911 are to successfully exist.
- At the time of this writing there is concern amongst the agencies within the GISTC on how they will be impacted by the IT consolidation required by the legislature. Several agencies are concerned that this could result in higher storage and/or server costs for their department. These higher costs could in turn impact the GIS Initiative in a number of ways: 1) If spatial data used internally at agencies for day-to-day operations are moved to the Hub database, this data will consume storage space previously allocated for general use, 2) reduced IT budgets may not allow for future upgrades of the GIS software, forcing the Hub infrastructure to stagnate at a given software version, 3) reduced IT budgets/personnel may reduce the development of GIS applications and processes that serve agencies and their constituents, which in turn reduces the need for the Hub.

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